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UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

Distr. LIMITED
E/ECA/CMU/15
23 October 1987
Original: ENGLISH

LC/NAIROBI

ECONOMIC COMMISSION FOR AFRICA

REPORT OF THE SECOND SEMINAR ON PLANNING OF RURAL TELECOMMUNICATION NETWORKS FOR ENGLISH-SPEAKING COUNTRIES

Harare, 5-14 October 1987

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*Restricted distribution

1. ORGANIZATION AND FUNDING

1.1 The second seminar on "Planning of Rural Telecommunication Networks for English-speaking countries" was held in the Harare Holiday Inn (Zimbabwe) from 5 to 14 October 1987. This seminar has been jointly organized by the United Nations Economic Commission for Africa and the Federal Republic of Germany. The German Ministry for Economic Co-operation (BMZ) had financed the project, while the ECA prepared and co-ordinated the project and organized the participation. The Government of Zimbabwe has hosted the meeting and the local UNDP office as well as the Embassy of the FRG gave administrative support.

1.2 The German Ministry of PTT (BPM) also gave support by providing lecturers at its own expense and by co-ordinating the German participation.

1.3 The International Telecommunication Union, the Centre for Telecommunications Development, the Pan African Telecommunications Union, the German Development Bank (KFW) and the ECA presented lectures. The lecturer from DETECON had been contracted by the ECA.

1.4 By invitation of ECA and the sponsoring ministries, representatives of German manufacturers of telecommunication equipment participated in the seminar as observers and during one day organized a presentation on rural telecomunications.

1.5 The Posts and Telecommunications Corporation of Zimbabwe provided the protocol, the transport as well as servicing of the meeting.

II. OBJECTIVES

2.1 The seminar objective was to insure training of African executives who are in charge of rural telecommunications planning in their respective countries, but also to create a forum for the exchange of knowledge and experiences between African and European experts.

2.2. Planning of rural telecommunications having been the main topic, special consideration had to be given to information on the present situation of rural telecommunications in Africa and existing modern systems, the criteria for the determination of requirements and, to a very large extent, to the elaboration of case studies including the presentation of project proposals in a bankable format.

III. PARTICIPATION

3.1 Twenty-three countries including the host had been invited to send one participant each, and three among them to also provide lecturers on African rural networks, all of them benefiting from fellowships granted by the project. For administrative reasons, Sudan could not send a delegate, whilst other countries sent additional participants at the expense of their respective governments.

The following member States were represented: Botswana (2), Cameroon (1), Egypt (1), Ethiopia (1), The Gambia (1), Ghana (1), Kenya (2), Lesotho (1), Liberia (1), Libya (2), Malawi (2), Mauritius (1), Mozambique (1), Nigeria (1), Seychelles (1), Sierra Leone (1), Somalia (1), Swaziland (1), Tanzania (1), Uganda (1), Zambia (1), and Zimbabwe (4).

3.2 The following international organizations were represented in the seminar: The International Telecommunication Union (ITU), the Centre for Telecommunications Development, the Pan African Telecommunications Union (PATU) and the Economic Commission for Africa (ECA). The African Development Bank (ADB) had envisaged to send an observer who, however, did not show up. The SATCC was represented by an observer.

3.3 As far as the donor country is concerned, the Ministry of Posts and Telecommunications (BPM) and the German Development Bank (KFW) provided lecturers.

3.4. Lecturers from three African countries presented country reports, namely from Zimbabwe, Malawi and Egypt.

3.5 The documentation for the case study had been elaborated by the lecturer of the German Telepost Consulting (DETECON).

3.6 Several representatives of manufacturers of telecommunications equipment presented technical concepts related to the case study, these came from ANT, PKI, SEL, Siemens and Telenorma respectively.

3.7 A total of 72 persons had been registered, among these regular participants, lecturers, observers and members of the secretariats from ECA and PTC. For easy reference, Annex B to this report includes a complete list.

IV. PROGRESS OF WORKS

4.1 Opening of the seminar

The seminar was opened by the Zimbabwean Minister for Information, Posts and Telecommunications, Dr Shamuyarira. Further speeches were pronounced by Messrs T.J. Baxter (ECA) and E. Lieser (BPM). The Minister and the other speakers stressed the importance of rural telecommunications for the economic development of the region.

4.2. Work-programme

The work-programme comprised nine working days. In addition to this, all participants except one voluntarily participated in the excursion organized during their day-off to the site where the case study had its origin.

In the course of the seminar three country reports and 19 lectures were given by the delegates of Zimbabwe, Malawi and Egypt as well as by representatives of the ITU, PATU, ECA, KFW, DETECON, Centre for Telecommunications Development and BPM on technical aspects and concepts for rural telecommunications and the presentation of projects in bankable format.

Approximately 30 per cent of the work-programme was dedicated to the elaboration of case-studies. During the workshop the participants were split into five working groups. Each session of the working groups was preceded by lectures on the respective subject of the workshop.

Mr. Theo 't Hart Chief Engineer Transmission of the PTC, assured the chairmanship during the whole seminar.

4.3. Participation of manufacturers

In order to make planners aware of equipment for rural telecommunications available on the market, manufacturers of this kind of equipment were invited to present practical solutions related to the subject of the case study.

4.4 Closing ceremony

The seminar was declared closed by the Deputy Minister of Information, Posts and Telecommunications, Dr. Naomi Nhiwatiwa. Statements were also given by a speaker from among the participants, as well as by Messrs E. Lieser (BPM), J. Kurz (FCA) and T.'t Hart (Chairman of the seminar). All speakers stressed the fact that rural development implies the application of rural telecommunications for the socio-economic benefit of the respective area.

V. SUMMARY OF LECTURES AND DISCUSSIONS

5.1 Lectures

For the purpose of initializing the exchange of experience, the programme of lectures was opened by three country reports on the situation of rural telecommunications in Zimbabwe, Malawi and Egypt respectively.

During the second seminar day topics relating to the role of telecommunications were treated by lecturers from the ITU, the PATU, the ECA and the CTD respectively.

The lecturers from KFW explained the bank's requirements as to the bankable format of project proposals as well as the principles of the sector analysis. The rural area criteria were defined by the lecturer from DETECON. The information provided on this third day of the seminar enabled the participants to start with the elaboration of the case study by preparing the sectoral and location analysis.

A second lecturer provided by ITU gave information on integrated rural telecommunication concepts and equipment during the fourth seminar day. Consequently, in the course of the case study participants proceeded to system configuration and choice of equipment.

During the following seminar day, a representative of the KFW supplied background information on project execution, cost estimates and the judgement on alternative solutions so as to allow the workshop to check cost estimates and to make cost comparisons.

The sixth day of the seminar was not a working day, however an excursion was organized to the site where the case study had its origin and which, until then, the participants only knew from the documentation.

During the following day, manufacturers of telecommunications equipment were given the opportunity of a presentation. They had been formally requested to limit themselves to refer only to equipment to be used in rural areas and with close relation to the subject of the case study. To a large extent, the presentations complied with the request.

On the seventh working day, lectures were provided on the principles of financial and economic analysis by representatives of BPM and KFW respectively. Subsequently, the selection of a method and the investment calculation were carried out during the workshop.

During the eighth working day, a KFW representative presented the last lecture treating the analysis of a project implementing organization. Participants went on with the workshop by writing individual group reports and compiling documentation in bankable format.

The results of the group works were presented on the last seminar day by the respective chairmen. By that time each group had finalized its respective study and all project proposals were formatted.

Details of the titles of lectures are given in Annexes A and C.

5.2 Discussions

Nearly all lectures gave room for extended and open discussions. The participants highlighted the problems they are encountering in their respective home countries and which very often prevented them from doing planning and choice of solutions in the way which had been recommended by the lecturers.

Main problems mentioned are due to scarcity of foreign currency thus obliging project implementing organizations to apply for external financing then sometimes without having the choice of suppliers. Although there is sufficient manpower in Africa, there is lack of trained staff. On the other hand, staff trained by the Telecommunication Administrations are very often absorbed by other organizations or private firms who offer better remuneration.

It was also reflected that features of equipment very often do not fit to conditions prevailing in Africa. This is especially true for air conditioning whenever it is required since investment and operation costs are considerably high, in many cases primary power is not available. The delegates expressed the need for common activities to be undertaken by African countries.

As for the cost/benefit analysis it was also mentioned that, in many countries, subscribers from Administrations and government authorities do not pay for telecommunication services thus reducing the possible income of the telecommunications entity.

VI. EVALUATION OF SEMINAR BY PARTICIPANTS

During the last seminar day, the participants were given the opportunity to make a confidential evaluation of all aspects related to the meeting. The questionnaire contained the subjects seminar programme, lectures, work-programme, method of working, documentation, organization, case studies, information provided by suppliers and accommodation. The evaluation could be given by ticking off a grade either extraordinary (E), or satisfactory, (S), or unsatisfactory (U).

The results of that exercise are given by percentage in the following table:

	E	S	U
1. Seminar-Programme	37	59	4
2. Lectures	30	65	6
3. Work-programme	26	67	7
4. Method of working	22	78	0
5. Documentation	44	56	0
6. Organization	59	41	0
7. Case studies	30	70	0
8. Information provided by suppliers	11	89	0
9. Accommodation	52	48	0

In comparison with preceding seminars, there is a strong tendency in evaluating various issues as "extraordinary". For two subjects the majority voted even for this grade.

The best result was given for organization, which 59 per cent found extraordinary. This success does not only go to ECA's account but has to be shared with the Zimbabwean PTC which had offered excellent logistic support.

Accommodation was also regarded as extraordinary by the majority which is not only due to the good standard of the hotel, but also to the fact that accommodation of participants, lecturers and observers as well as the conference centre were under the same roof. Only three subjects attracted a low percentage of negative results, namely the seminar-programme, the lectures and the work-programme. From the individual additional comments it may be concluded, that the programme was overcharged, thus not leaving enough time for recreation. It was also commented that sometimes lecturers were reading long manuscripts, since for individual problems with the English language they apparently were not able pronounce free speeches.

The following comments were given specifically by individual or various participants, the number of participants having given them is shown in brackets:

- there should be at least one day or week-end off (7)
- the duration should be two or three weeks (5)
- some lectures were too long leaving not sufficient time for discussions (4)
- the presentations of KFW were especially appreciated (4)
- case-study should allow more practical work (4)
- more time for financial and economic issues (3)
- excellent presentation of the ITU economist Dr. Richter (3)

VII ECA'S COMMENTS AND RECOMMENDATIONS

7.1 Level of participation

All participants were planners responsible in the field of rural telecommunications, some of them being executives with a vast experience in the subject. This has been shown by the high level of discussions as well as by the way the case-studies were elaborated.

7.2. Duration and programme of seminars

In comparison with former seminars the duration has been extended, however the numbers of lectures had also increased and the workshop needed considerable time. Consequently, the programme was overloaded. The next seminars would need to be extended by two days without substantial increase in the number of lectures.

7.3. Methods of presentation

The methods of presentation by lectures, documentation and utilization of an overhead-projector and a flipchart was generally well-balanced. However, some lectures were too long and transparencies were not always suitable for overhead-projection.

The case study was an important element and is relevant to the great success of the seminar.

7.4. Participation of manufacturers

It is generally accepted that planners have to know the equipment available on the market and manufacturers have to know the conditions prevailing in Africa. For that reason, the participation of manufacturers is appreciated, especially as they tried to offer technical solutions related to the subject of the case study.

7.5 Documents distributed

All lecturers and manufacturers arrived with well-prepared documents in sufficient number that were handed over to participants partly before and partly after the lectures.

LIST OF LECTURES, DOCUMENTATION AND HANDOUTS

Lectures

1.	J. Kurz, ECA	Introduction: Objectives and work schedule of seminar
2.	C. Shonhai, Zimbabwe	1. Country report
3.	M.M. Makewa, Malawi	2. Country report
4.	A.W.M. El-Dokki, Egypt	3. Country report
5.	W. Richter, ITU	Probable effects of rural telecommunications on economic development
6.	J. Andah, PATU	African perspective on the promotion of rural telecommunications
7.	T.J. Baxter, ECA	The application of telecommunications as facilitors for development programmes
8.	F. Kramer, KFW	Principles of promotion
9.	U.V. Swieykowski and F. Kramer, KFW	Bankable format of project proposals
10.	H.J. Heymann, DETECON	Rural area criteria
11.	F. Kramer and U.V. Swieykowski, KFW	Principles of sector analysis
12.	T. Turpeinen, ITU	Integrated rural telecommunications concepts
13.	T. Turpeinen, ITU	Rural telecommunications equipment
14.	F. Kramer, KFW	Planning and execution of rural networks
15.	G. Tedros, ITU/CTD	Aspects of rural telecommunications
16.	K.G. Stahl, BPM	Principles of financial analysis
17.	F. Kramer and U.V. Swieykowsky, KFW	Principles of economic analysis
18.	U.V. Swieykowsky, KFW	Analysis of project implementing organizations

Documentation

ANT "Microwave systems for the connection of local exchange areas with the national network"

PKI "Fibre Optic Systems in the Local Exchange Areas"

SEL "Small switching units and multiple access radio systems"

SIEMENS (a) "Digital Communications Equipment for Rural Applications"
(b) "Power Supply of Telecom Equipment by Photovoltaic"

TELENORMA "Small and Medium Capacity Exchange for Rural Areas"

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ECONOMIC COMMISSION FOR AFRICA
Second Seminar on "Planning of rural telecommunication networks"
Harare, 5-14 October 1987

WORK-PROGRAMME

Date: Monday, 05 Oct. 1987

Time	Lecture	Main topics	Lecturer from
8.00-9.20	Registration		ECA Secretariat J. Kurz T.J. Baxter
9.20-9.50	Coffee-Break		
9.50-10.50	Opening session		ECA BPM/BMZ Zimbabwe
10.50-11.10	Distribution of documents		ECA Seminar Co-ordinator J. Kurz
11.10-11.30	Break		
11.30-12.00	Introduction	Objectives and work schedule of seminar	ECA Seminar Co-ordinator J. Kurz
12.00-12.50	1. Country report	Actual situation of rural telecommunications	Zimbabwe C. Shonhai
12.50-14.30	Lunch break		
14.30-15.50	2. Country report	Rural Telecommunications in Malawi	Malawi M.M.Makawa
15.50-16.10	Coffee break		
16.10-17.00	Discussion on country reports		
18.00	Opening Reception, sponsored by Posts and Telecommunications Corporation, Zimbabwe.		

Date: Tuesday, 06 Oct. 1987

Time	Lecture	main topics	lecturer from
8.00- 9.20	3. Country report Discussion	Rural Telecommunications in Egypt	Egypt A.W.M. el Dokki
9.20- 9.50	Coffee-Break		
9.50- 11.10	The role of rural telecom. in the development process	Probable effects of rural telecom on economic development	ITU W. Richter
11.10- 11.30	Break		
11.30- 12.50	The role of rural telecom in the development process	African Perspective on the Promotion of Rural Telecommunications	PATU John S. Andah
12.50- 14.30	Lunch-Break		
14.30- 15.00	The role of rural telecom in the development process	The Application of Telecommunications as Facilitors for Development Programmes	ECA T.J. Baxter
15.00- 15.50		Principles of Promotion	BMZ/KFW F. Kramer
15.50- 16.10	Coffee-break		
16.10- 17.00	Introduction of Case study	Objectives and work schedule; organisation; grouping	DETECON/BPM

Date: Wednesday, 07 Oct. 1987

Time	lecture	main topics	lecturer from
8.00- 9.20	Bankable format of project proposal	Presentation of banks requirements to point out that the group work shall lead to a project proposal in bankable format	KFW U.V. Swieykowski F.Kraemer
9.20- 9.50	Coffee-Break		
9.50- 11.10	Rural area criteria	Definition of rural area, specific characteristics in rural telecom (key parameters)	DETECON H.J. Heymann
11.10- 11.30	Break		
11.30- 12.50	Principles of sector analysis	Analysis of problems and objectives (project rational) Analysis of demand and existing capacities; necessity for additional capacities	KFW
12.50- 14.30	Lunch-Break		
14.30- 15.50	Case study sectoral and location analysis	Study and discussion in group work Problems to be solved by the project objectives to be obtained	Tutors
15.50- 16.10	Coffee-Break		
16.10- 17.00	Case study (ctd)		

Date: Thursday, 08 Oct. 1987

Time	lecture	main topics	lecture from
8.00-9.20	Integrated rural telecom concepts		ITU T. Turpeinen
9.20-9.50	Coffee-Break		
9.50-11.10	Rural telecom equipment		ITU T. Turpeinen
11.10-11.30	Break		
11.30-12.50	Case study system configu-tion/choice of equipment	Conceiving of tech-nical telecom con-cept; alternative solution; checking of equipment avail-able	Tutors
12.50-14.30	Lunch-Break		
14.30-15.50	Case study (ctd)	Checking choice of equipment and ca-pacity layout	
15.50-16.10	Coffee-break		
16.10-17.00	Case study (ctd)		

Date: Friday, 09 Oct. 1987

Time	lecture	main topics	lecture from
8.00- 9.20	Planning and execution of rural network	Concepts of project execution Cost estimates, judgement on alternative solutions	KPW DETECON F. Kramer H.J. Heymann
9.20- 9.50	Coffee-Break		
9.50- 11.10	Operation and Aspects of rural telecommunications	Technical concepts Maintenance concepts	ITU Centre for Telecommunications Development G. Tedros
11.10- 11.30	Break		
11.30- 12.50	Case study (ctd) project shaping cost calculation	Choice of execution Checking cost estimates cost comparisons	Tutors
12.50- 14.30	Lunch-Break		
14.30- 15.50	Case study (ctd)		Tutors
15.50- 16.10	Coffee-Break		
16.10- 17.00	Case study		Tutors

Date: Saturday, 10 Oct. 1987

No Seminar programme

Excursion (subject to acceptance by participants)

Date: Sunday, 11 Oct. 1987

Time: 09.30-16.00h

Presentation of suppliers' equipment

18.00h

Social event, sponsored by suppliers

Date: Monday, 12 Oct. 1987

Time	lecture	main topics	lecturer from
8.00-9.20	Principles of financial analysis	Tarification profitability: Dynamic investment calculation (IRR, present value) cost coverage	BPM K.H. Stahl
9.20-9.50	Coffee-Break		
9.50-11.10	Principles of economic analysis	Aspects of Cost-Benefit-Calculation; Problem of attribution of benefits External and Socio-economic effects	KFW
11.10-11.30	Break		
11.30-12.50	Case study (ctd)	Selection of method checking investment calculation recommendation	Tutors
12.50-14.30	Lunch-Break		
14.30-15.50	Case study (ctd)		
15.50-16.10	Coffee-Break		
16.10-17.00	Case study (ctd)		

Date: Tuesday, 13 Oct. 1987

Time	lecture	main topics	lecturer from
8.00-9.20	Analysis of project sponsor	Management and organisation, personnel and training, Financial situation	KFW
9.20-9.50	Coffee-Break		
9.50-11.10	Case study (ctd) Editing of project proposal in bankable format	Writing of group report and filing of documentation to present a project proposal in bankable format	
11.10-11.30	Break		
11.30-12.50	Case study (ctd)		
12.50-14.30	Lunch-break		
14.30-15.50	Case study (ctd)		
15.50-16.10	Coffee-break		
16.10-17.00	Case study (ctd) Distribution of evaluation sheets		
18.00	Closing Reception (Holiday Inn) sponsored by the Ambassador of the Federal Republic of Germany		

Date: Wednesday, 14 Oct. 1987

Time	lecture	main topics	lecturer from
8.00- 9.20	Collection of evaluation sheet Presentation of Case study	 Each group presents its case study Discussion on each project proposal	
9.20- 9.50	Coffee-break		
9.50- 12.00	Presentation of case study (ctd)		
11.10- 11.30	Break		
12.00- 12.50	Evaluation of seminar		
12.50- 14.30	Lunch-break		
14.30- 15.00	Participants BPM ECA Chairman Deputy Minister		